

What is claimed is

1. An optical module for transmitting and receiving an optical signal comprising:

5 a die pad;

at least one platform body mounted on the die pad;

two or more transceiver units mounted on the platform body;

and

an encapsulation member which covers at least part of the

10 platform body and a part of the die pad;

wherein each transceiver unit includes

an optical fiber fixed on the platform;

a receiving photo-diode mounted that is on the platform body

and transforms optical signals received through the optical fiber into

15 electric signals;

a light emitter that is mounted on the platform body and generates optical signals to be transmitted through the optical fiber;

a filter provided so that the optical fiber is divided at a position between the receiving photo-diode and the light emitter; and

20 a ferrule in which the end of the optical fiber is inserted.

2. The optical module in accordance with Claim 1 further comprises

a silicon gel which covers at least a part of the optical fiber, the receiving photo-diode, the light emitter or the filter efficiently.

25 3. The optical module in accordance with Claim 1 further comprising:

one or more ICs which receive the output signals from the receiving photo-diode and process the output signals and/or drive the light emitter.

4. The optical module in accordance with Claim 1, wherein the platform body includes a PD platform body on which the receiving photo-diode is mounted and an LE platform body on which the light emitter is mounted.
5. The optical module in accordance with Claim 4, wherein the transceiver unit further comprises a monitoring photo-diode which is mounted on the LE platform body and used for monitoring the luminescence intensity of the light emitter.
6. The optical module in accordance with Claim 1, wherein at least two transceiver units among the two or more transceiver units are arranged in parallel and oriented in the same direction.
7. The optical module in accordance with Claim 6, wherein the PD platform body and the LE platform body are provided commonly for at least two transceiver units.
15. The optical module in accordance with Claim 1, wherein at least two transceiver units among the two or more transceiver units are arranged in series and oriented in opposite directions.
9. The optical module in accordance with Claim 8, wherein the PD platform body is provided separately for each transceiver unit and the LE platform body is provided in common for the transceiver units.
10. The optical module in accordance with Claim 1, wherein the filter consists of one filter common to the transceiver units.
11. The optical module in accordance with Claim 1, wherein the receiving photo-diode is a photo-diode array common to the transceiver units.
25. The optical module in accordance with Claim 1, wherein the light emitter is provided as a light emitter array common to the transceiver units.
13. The optical module in accordance with Claim 4, wherein the

monitoring photo-diode is a photo-diode array common to the transceiver units.

14. A method of fabricating an optical module for transmitting and receiving optical signals comprising the steps of:

5       mounting on a die pad an LE platform equipped with at least a light emitter which generates optical signals to be transmitted;

      mounting on the die pad or the LE platform a PD platform equipped with two or more optical fibers, at least one receiving photo-diode that performs photoelectric conversion of an optical

10      signal received through the optical fibers, at least one filter that separates the optical signal received from the optical signal to be transmitted, and two or more ferrules in which the ends of the optical fibers are inserted, and

15      encapsulating the LE platform and the PD platform with an encapsulation member so that the ends of the ferrules are exposed.

15. The method of fabricating an optical module in accordance with Claim 14 further comprising a step of:

      performing a screening test after mounting the LE platform on the die pad, and mounting the PD platform on the die pad after that  
20      the screening test.

16. The method of fabricating an optical module in accordance with Claim 15 further comprising a step of:

      applying the silicon gel to cover at least a part of the optical fiber, the receiving photo-diode, the light emitter or the filter.